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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/549,840	Applicant(s) PEDRETTI ET AL.	
	Examiner Stephen Brookman	Art Unit 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 03 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the non-symmetrical nose and rear regions of the lifting body must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 1 is objected to because of the following informalities: in line 10, the word “is” should be “are.” Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the limitations “the nose and rear regions of the lifting body are non-symmetrical” and “providing the airship with non-symmetrical nose and rear regions” were not part of the application as filed and were not supported by the original disclosure at the time of filing and are therefore deemed new matter.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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With regard to Claim 1, it is not clear if the lifting body comprises the limitations listed after line 1 or if the airship comprises these limitations. As written, the preamble of Claim 1 merely requires a lifting body that is capable of being used in an airship, the airship comprising the elements of the remainder of the claim.

Claim 12 recites the limitation "the opposite ends" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

With regard to Claim 13, while the intended result of the design is claimed, the apparatus and structure by which this result is achieved is not distinctly claimed. The design by which torque is not conducted into the compression members is unclear and not claimed. What structure is being claimed in Claim 13? Claim 13 is rendered unclear in that it recites only the consequences of a particular structure without describing the elements that produce this result.

With regard to Claims 14 and 15, the term "low" is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The level of extensibility is indeterminate and indefinite.

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Claim 19 recites the limitation "geodetic lines" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the airship" in line 4. There is insufficient antecedent basis for this limitation in the claim. This is because "the airship" is part of the intended use of the method of lifting the lifting body and it does not appear as though the airship is being claimed in Claim 20, only the lifting body is being positively claimed.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 6-9, 14-16, and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Pedretti (U.S. Patent Application Publication 2002/0157322 A1).

With regard to Claim 1, Pedretti discloses a pneumatic structural element (which is capable of being used as a lifting body for an airship, for example) having:

- A gas-tight skin (1)
- At least one node element (3)
- Wherein a first node element of the at least one node element is attached to a nose region of the lifting body (i.e. the node element is attached to a

first end of the structural element as seen in Figure 10, thereby being attached to a nose region of the lifting body when the element is used as a lifting body)

- Wherein a second node element of the at least one node element is attached to a rear region of the lifting body (i.e. the node element is attached to a second end of the structural element as seen in Figure 10, thereby being attached to a rear region of the lifting body when the element is used as a lifting body)
- At least one compression member (i.e., pressure rod (2)) wherein the at least one compression member is disposed on and connected to the gas-tight skin (1), wherein opposite ends of the at least one compression member are anchored in the first and second node elements (i.e. "formed as nodes 3," paragraph 19)
- At least two tensile bands (i.e. tension elements (4)) disposed relative to each of the at least one compression member, the at least two tensile bands running in opposite spiral directions around the gas-tight skin from one end of at least one of the at least one compression member to another end of the at least one of the at least one compression member, wherein the at least one of the at least one compression member is anchored in the first and second node elements (i.e., embracing the hollow body (1) in the form of a screw with opposite circulating senses, as disclosed in Pedretti, paragraph 20 and Figures 8 and 10, and connecting

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to opposite ends of the compression member, or pressure rod (2), in the nodes of the compression member, as seen in Figures 8 and 10)

- Means for attaching rigid components of another structural element (i.e., rigid components of an airship) to the at least one compression member (via the connection with the at least one node element, as seen in Pedretti, Figure 7, whereas the yoke (19) is a structural element connected to the compression member of each pneumatic structural element)
- Wherein the nose and rear regions of the lifting body are non-symmetrical (i.e. it is clear that a cross-section taken through the region near one of the end nodes would leave an asymmetrical shape, rounded on one side and flat on the other, and further there are several additional available axes or planes about which the nose and rear regions are non-symmetrical).

With regard to Claim 2, Pedretti discloses a plurality of compression members (i.e., pressure rods (2) in Figure 10).

With regard to Claim 3, at least one compression member of the plurality of compression members has bending elasticity (i.e. pressure rods have bending elasticity, since they may comprise materials such as bamboo, which has bending elasticity, Paragraph 23, and it should also be noted that all physical objects have elasticity to some degree).

With regard to Claim 4, the at least one compression member of the plurality of compression members (i.e. pressure rods) run along surface lines of the hollow body (as visible in the figures, especially Figure 10).

With regard to Claim 6, the at least one compression member of the plurality of compression members (pressure rods) disclosed by Pedretti may be made from carbon-fiber-reinforced plastic (i.e. composite materials using carbon fibers in a suitable plastics material matrix, paragraph 24).

With regard to Claim 7, the compression members disclosed by Pedretti are positioned in a rotationally symmetric orientation with respect to each other, as seen in Figure 10.

With regard to Claim 8, Pedretti discloses the at least one compression member of the plurality of compression members (pressure rods) as being attached to the hollow body (gas-tight skin) and is deemed to be permanently bonded thereto.

With regard to Claim 9, it has been held that the term “integral” (i.e., integrated) is sufficiently broad to embrace constructions united by such means as fastening and welding. *In re Hotte*, 177 USPQ 326, 328 (CCPA 1973). In Claim 9, any attachment to the gas-tight skin (i.e., sleeves (13) on the hollow body that are

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able to receive the compression member (i.e. pressure rod, 2), as illustrated in Figure 3 and in Paragraph 23) is regarded as being considered integral.

With regard to Claim 14, the at least two tensile elements/bands of Pedretti (i.e., aramid fibers in paragraph 24 or polyester cords in paragraph 23) have low extensibility and help press the compression members (pressure rods) against the gas-tight skin under tensile stress.

With regard to Claim 15, the at least two reference tensile bands are textile materials, such as aramid fibers (paragraph 24), which have low extensibility.

With regard to Claim 16, Pedretti discloses using aramid fibers in the at least two tensile bands (tensile elements, paragraph 24).

With regard to Claim 20, all elements are *provided* as described above which form a pneumatic structural element capable of lifting a lifting body (i.e., a lifting body for an airship). The rigid components are any components not part of the gas-tight skin (1), namely, the compression members.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pedretti (U.S. Patent Application Publication 2002/0157322 A1) in view of Hagenlocher (U.S. Patent 6,056,240).

Pedretti calls for composite materials (paragraph 24), but does not disclose one specific composite material. Hagenlocher discloses the use of fiberglass reinforced plastic in airship structures (column 4, lines 7-8). Therefore, it would have been obvious

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to one of ordinary skill in the art at the time of the invention to utilize fiberglass reinforced plastic as taught by Hagenlocher in the compression members as the structural composite material in the apparatus of Pedretti in order to increase the resilient strength of the compression members without compromising in weight.

13. Claims 10-13, 18, and 19 are rejected under 35 U.S.C. 103(a) as being obvious over Pedretti (U.S. Patent Application Publication 2002/0157322 A1) in view of Bell (U.S. Patent 7,207).

With regard to Claim 10, Pedretti discloses the claimed invention except for the use of shell-shaped nodes laid over the nose or rear of the lifting body. Bell discloses an airship using a web network as seen in Figure 1 for supporting the pressurized gas container (skin, described on Page 2, lines 55-58). Bell's silk ribbons (*g*) are connected to node elements as seen in Figure 1. Bell's node elements are seen as shell-shaped and laid over the nose and rear of the gas-tight skin of Bell's airship. It would have been obvious to one having ordinary skill in the art at the time of the invention to use the node elements of Bell in the structure of Pedretti as a means for connecting the supporting structure of the tension elements (i.e. tensile bands) and pressure rods (i.e. compression members) in order to more effectively conduct loading between the ends of the pneumatic structural element and the tension elements and compression members.

With regard to Claim 11, Pedretti discloses the claimed invention except for the use of annular nodes laid around the nose or rear of the lifting body. In addition to the airship web network disclosed by Bell and discussed above, Bell shows nodal elements

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in Figure 3 which connect as annular rings near the nose and rear of the airship. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the annular node elements of Bell in order to connect the tension elements (i.e. tensile bands) and pressure rods (i.e. compression members) of Pedretti for the purpose of conducting loading between the ends of the pneumatic structural element and the tension elements and compression members. Further, the unified connection makes multiple pieces unnecessary, simplifying the assembly process.

With regard to Claim 12, Pedretti does not expressly disclose the opposite ends of the compression members (i.e. pressure rods) being permanently bonded to annular node elements. Bell discloses the structure discussed above and includes the disclosure that the web network is stitched together (i.e., permanently bonded) at intersections (page 2, lines 68-69). Therefore, the annular nodes discussed above are permanently bonded to the structural members of Bell. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the permanent bonding between annular nodes and support structure of Bell in the structure disclosed by Pedretti in order to maintain connection between nodes and compression members permanently so that the elements do not shift or release, causing loss of support.

With regard to Claim 13, the combination of Pedretti and Bell, as taught above, has the same structure as that of the instant application. Therefore, the limitations of Claim 13 would inherently be met by the structure created by the obvious combination of Pedretti and Bell, as discussed above, since all claimed structures have been anticipated.

With regard to Claim 18, the structure disclosed by Pedretti further includes the tensile lines/bands (tension elements) as being along geodetic lines of the gas-tight skin between node elements (paragraph 23).

With regard to Claim 19, portions of the nodes of Bell, as featured in the invention of Pedretti as modified by Bell, are deflection elements provided at intersections of the tensile bands (i.e. the bands come together/intersect at the nodes) wherein geodetic lines of the tensile bands intersect in an intersection (i.e. at the deflection element, being an intersection), wherein the tensile bands pass from a first geodetic line into a second geodetic line (i.e. the bands are along geodetic lines and they intersect with other bands at the deflection element/node parts, thereby passing the connection from a first geodetic line to another/different geodetic line).

14. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pedretti (U.S. Patent Application Publication 2002/0157322 A1) in view of Ross (U.S. Patent 1,788,595). Pedretti discloses substantially the claimed invention except for the use of at least one steel cable in each tensile band. Ross discloses tension members (6) that are rods or cables. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use cables as tension members, as taught by Ross, in the structure of Pedretti, for the same purposes. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. It is also common knowledge to choose a material that has sufficient strength, durability, flexibility, hardness, etc. for the application and intended use of that

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material. Steel is a known choice for strength and flexibility, as required by such a design. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use steel as the cable material to obtain the desired strength, flexibility, and durability.

15. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pedretti (U.S. Patent Application Publication 2002/0157322 A1) and Bell (U.S. Patent 7,207) as applied to Claims 1, 11, 12, and 13 above and further in view of WO 2004/001163 (Reference the disclosure of the equivalent publication, U.S. 2006/0099357 A1).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Pedretti discloses the tension members/bands (4) being mutually secured against movement at (8) in Paragraph 29, lines 3-5, but does not disclose deflection elements provided at their intersection. The abstract and front figure of WO2004/001163 disclose a deflection element for a hollow body that fixes the pull strips (i.e., tension members) in such a way that the lines of the tensile bands intersect at an intersection, but the tensile bands themselves pass from one geodetic line to another geodetic line in the direction of the screw motion (i.e., geodetic lines). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide Pedretti with deflection elements, as taught by WO2004/001163 in order to adjust the direction of the pulling forces of the tension members of the structure disclosed above

Response to Arguments

16. Applicant's arguments filed November 3, 2008 have been fully considered but they are not persuasive. The additional limitation of "wherein the nose and rear regions of the lifting body are non-symmetrical" is new matter and was not enabled by the disclosure at the time of filing as discussed above. Further, Pedretti (U.S. Patent Application Publication 2002/0157322) teaches the nose and rear regions being non-symmetrical, as it is clear that a cross-section taken through the region near one of the end nodes would leave an asymmetrical shape, rounded on one side and flat on the other, as rejected above in Claims 1 and 20.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Brookman whose telephone number is (571) 270-5513. The examiner can normally be reached on Monday through Thursday 10:00 AM EST to 4:00 PM EST, away alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571) 272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Conclusion

18. The examiner has acknowledged amendments to the abstract, specification, drawings, and claims. Claims 1-20 are rejected above.

/S. B./
Examiner, Art Unit 3644

/Timothy D. Collins/
Primary Examiner, Art Unit 3643
For Michael Mansen